one case a missionary intending to remove to Angola was not permitted to carry her purchased pupils with her; 'thus has a negro government interfered to prevent a white missionary from taking native children 2,000 miles from their parents and kindred, in accordance with the plans of a missionary bishop' (page 43).. The text contains comparatively little of ethnic interest save in scattered morsels, for, as is usual in evangelizing and civilizing enterprises, it is considered that no good thing can come from the Nazareth of the primitive; but some of the mechanically reproduced photographs illustrate the features, costume and customs of the natives, the appearance of their barricaded towns, etc., while the numerous cuts give faithful pictures of flora and landscape, and admirably supplement the simple and modest description in depicting Liberia as it is.

It is announced that the society, though retaining its original name, long since gave up its adherence to any scheme of colonization, as such, and now confines its activities to education and practical questions. A note indicates that additional copies of the report can be obtained by applying to Charles T. Geyer, Secretary, 19 William street, New York City.

W J McGEE.

WASHINGTON, D. C.

## *SCIENTIFIC JOURNALS.*

### AMERICAN JOURNAL OF SCIENCE.

THE May number opens with an article by John Trowbridge, discussing the probable presence of carbon and oxygen in the sun. This is in the line of work earlier done (1887) by the same author in combination with C. C. Hutchins, in which they showed that the carbon bands could probably be detected in the sun's spectrum, although nearly obliterated by the overlying absorption lines of other metals, particularly those of iron. Some quantitative experiments have been now carried out by the author to show what relative proportion of iron mixed with carbon dust was required in order to produce this effect of obliterating the carbon bands. Pencils, made of carbon dust and iron (reduced by hydrogen) uniformly distributed through it, were employed. The solar spectrum near the carbon band at wave-length 3883.7 was then photographed, also below on the same plate the pure carbon banded spectrum, and finally, immediately below this, the spectrum of the mixture of iron and carbon. It was found that from twenty-eight to thirty per cent. of iron, in combination with seventy-two or seventy per cent. of carbon, almost completely obliterated the peculiar banded spectrum of carbon. This proportion, therefore, of iron in the atmosphere of the sun, were there no other vapors of metals present, would be sufficient to prevent our seeing the full spectrum of carbon. The author then goes on to consider the case of oxygen and remarks that the question whether oxygen exists in the sun is closely related to questions in regard to the presence of carbon, when the temperature and light of the sun are considered. The regions in the solar spectrum where the bright lines of oxygen should occur if they manifest themselves have been carefully examined in order to see if any of the fine absorption lines of iron in the spectrum of iron were absent, for it is reasonable to suppose that the bright nebulous lines of oxygen would obliterate the faintest lines of iron. The result is to prove that the faintest iron lines are not obliterated in the spaces where the oxygen lines should occur.

The author concludes by remarking that, although he has not succeeded in detecting oxygen in the sun, it seems to him that the character of its light, the fact of the combustion of carbon in its mass, the conditions for the incandescence of the oxides of the rare earths which exist, would prevent the detection of oxygen in its uncombined state. Notwithstanding the negative evidence brought forward, he adds that he cannot help feeling strongly that oxygen is present in the sun and that the sun's light is due to carbon vapor in an atmosphere of oxygen.

An extended article by Harold Jacoby gives a minute mathematical discussion of the determination of the division errors of a straight scale. T. Holm gives the results of studies upon the *Cyperaceæ*, with reference to the monopodial ramification in certain North American species of *Carex*. It is shown that the monopodial character is especially well represented on this side of the Atlantic and may indeed be said to be prevalent among our sylvan forms. The article

is accompanied by a plate. W. H. Weed and L. V. Pirsson give a continuation of their paper on the Bearpaw Mountains of Montana, commenced in the April number. This is devoted to the discussion of the Beaver Creek core with reference to the massive rocks there present. These are of various types, ranging from quartz syenite and quartz syenite poryhyry to basic syenite (or, as the rock has been called by Brögger, monzonite), and finally to shonkinite. It is remarked by the authors that their yogoite already described from Yogo Peak, Montana, is essentially identical with monzonite, and hence the latter name has priority.

M. Carey Lea has two brief articles. The first discusses the question of the presence of Röntgen rays in the sunlight, and decides this in the negative. A number of conclusive experiments are described, upon which this decision is based. The second article is on the numerical relation existing between the atomic weights of the elements, especially with reference to the colored and colorless character of the ions. This last subject was discussed by the same author in the *American Journal* for May, 1895, and a second paper is promised for June of this year. W. B. Clark describes minutely the Potomac River section of the Middle Atlantic Coast Eocene, showing the seventeen divisions identified in the detailed stratigraphy of the deposits as exhibited particularly between Aquia Creek, Stafford county, Virginia, and Pope's Creek, Charles county Maryland. It is concluded that the Eocene deposits of the Middle Atlantic slope constitute a single geological unit which has been described as the Pamunkey formation. The deposits are remarkably homogeneous, consisting typically of glauconitic sands and clays of a thickness of nearly 300 feet. There are two well-defined faunal zones, namely, the Aquia Creek stage and the Woodstock stage. The former approximately corresponds to the middle, or middle and upper, Lignitic, and the latter to the middle, or middle and upper, Claiborne. The author concludes by remarking that the middle Atlantic slope Eocene undoubtedly represents in a broad way all of the major part of the Lignitic, Buhrstone and Claiborne of Smith and, when the physical condition affecting range and migration of species are considered, perhaps even more. Both the geological and paleontological criteria are wholly inadequate for establishing the great number of local subdivisions recognized in the Gulf area, and in fact the sequence of forms indicates that no such differentiation of the fauna took place.

H. S. Washington describes some peculiar Ischian trachytes with special reference to certain remarkable branching forms exhibited by the feldspar phenocrysts; these are analogous to the feather-aggregates of augite which have been described in some Hawaiian basalts. For such divergent crystal forms, which are regarded as due to the ramification and growth of a single individual, and which correspond to the *sphærokrystalle* of Lehmann and Rosenbusch, the name *keraunoid* (Gr. κεραννός, a thunderbolt), is proposed. The existence of such forms has been explained by Lehmann as due to internal tensions which cause the crystals to split here and there at the surface, producing a discontinuity which cannot be overcome by further growth. The author adds the results of his own observations as modifying and extending the results of Lehmann, and concludes by considering the various types of spherulites in general. The articles close with a paper by C. Palache describing some highly modified crystals of crocoite, from a hitherto undiscovered locality in Tasmania.

AMERICAN CHEMICAL JOURNAL, APRIL.

*The action of light on some Organic Acids in the presence of Uranium salts.* By HENRY FAY.

After reviewing previous work on this subject the author gives the results obtained with oxalic, butyric, propionic and acetic acids. From oxalic acid he obtained carbon dioxide, carbon monoxide, formic acid and several uranium compounds. When the acids of the acetic acid series were used, equal parts of carbon dioxide and the hydrocarbon corresponding to the acid were formed. Succinic and malonic acids could not be used on account of the insolubility of the uranium compounds.

*A review of some recent work on Double Halides.* By CHARLES H. HERTY.

In this paper attention is called to the char-

acter of recent work on these compounds and the apparent ignorance of published results, and a plea is made for greater care and accuracy in the preparation and analyses of these salts.

*On the Quantitative Determination of Hydrogen by Means of Palladous Chloride.* By E. D. CAMPBELL and E. B. HART.

The hydrogen contained in a gas mixture can be completely absorbed by a 1 per cent. solution of palladous chloride, and determined more easily that way than by explosion with oxygen.

*On the Behavior of Certain Derivatives of Benzol Containing Halogens.* By C. LORING JACKSON and S. CALVERT.

The presence of certain groups in a substituted benzine, containing also a halogen, makes the halogen more easily replaceable. The effect of the nitro group has been carefully studied, and in this paper the authors give the results of the influence of halogens on halogens, according to their number and position in the molecule.

*The Cis and Trans Modifications of Benzine Hexabromide.* By W. R. ORNDORFF and V. A. HOWELLS.

The authors have made the cis modification of benzine hexabromide, and give the results of the chemical and crystallographic study of the substance.

*Silicide of Calcium.* By G. DECHALMOT.

When lime, carbon and silica in excess are heated in an electric furnace, a substance of metallic appearance is formed. This is mainly silicide of calcium, with a little carbide of calcium and iron.

*The Conductivity of Yhtium Sulphate.* By H. C. JONES and C. R. ALLEN.

The conducting of different dilutions are given in this paper.

*The Practical Use in the Chemical Laboratory of the Electric Arc Obtained from the low Potential Alternating Current.* By M. S. WALKER.

The author advises the use of the electric arc in the laboratory as a partial substitute for the blowpipe, to show the effects of high temperatures on refractory substances, and for the synthetical preparation of some compounds of carbon.

*The Preparation of Allylene and the Action of Magnesium on Organic Compounds.* By E. H. KEISER.

When acetone is conducted over hot magnesium a black powder is formed, which decomposes when brought in contact with water. The product consisting of hydrogen and allylene is passed through an ammoniacal solution of silver nitrate, when an insoluble silver allylide is formed. The copper and mercury compounds have also been made.

*The Action of Urea and Sulphocarbanilide on Certain Acid Anhydrides.* By F. L. DUNLAP.

The formation of a number of complex compounds can be explained on the supposition that the reaction takes place in two stages, and the author has isolated some of the intermediate products.

There is also a review of the work on *Elektrochemie*, by W. Ostwald, and a note on *The Dilution Law of Ostwald.* J. ELLIOTT GILPIN.

THE JOURNAL OF COMPARATIVE NEUROLOGY, MARCH.

*Illustrations of Central Atrophy After Eye Injuries.* By C. L. HERRICK.

This brief article is a commentary on a plate of drawings made from two series sections of the brains of rabbits whose eyes had been extirpated shortly after birth and which had been killed respectively 67 and 91 days after the operation.

*Lecture Notes on Attention. An Illustration of the Employment of Neurological Analogies for Psychical Problems.* By C. L. HERRICK.

Experiments are adduced which go to show that external attention is of the nature of a reflex which may or may not retain a relation of subordinated connection with conscious processes. Which particular impression may be selected out of a given sense complex for especial attention will depend upon habit mainly. All of the impressions of a given field of sense may become the content of that sense and so may exert their appropriate effects in infra-conscious spheres of association, etc., even though only part of them ever reach consciousness. The discussion as to the possible number of contemporaneous sensations is based on a

misconception. Though the content of sense may be diversified, only one thing is ever in the focus of consciousness at a given time. Attention becomes a set of rapidly repeated reproductions. In thinking intently of one thing we limit the field of oscillation and cut off distractions as much as possible, but the oscillations with the various resulting associations continue and give pregnancy to the meditation. Attention is a name for the play of consciousness, and a study of its laws reduces, on the one hand, to the investigation of neural equilibrium, and, on the other, to a natural history of consciousness. The conditions of inner attention are those of association and inhibition.

*A Note on the Cerebral Fissuration of the Seal (Phoca vitulina).* By Pierre A. Fish.

The description and illustrations of this brain show that it clearly possesses the carnivorous type of fissural pattern, in spite of several complexities which tend to obscure the type.

*Morphology of the Nervous System of Cypris.* By C. H. Turner.

This is the first instalment of a monograph on the Ostracoda which Prof. Turner has had in preparation for several years. It is accompanied by six plates. The ganglia and nerves of the central nervous system and the sense organs of Cypris are described with considerable minuteness. Labial, labral and thoracic nerves are described for the first time among the Ostracoda. Several new sense organs are also described.

*Preliminary Notes on the Cranial Nerves of Cryptobranchus alleghaniensis.* By J. H. McGregor.

In this paper the cranial nerves of the water dog are described, so far as they can be determined by macroscopic methods.

*On Three Points in the Nervous Anatomy of Amphibians.* By J. S. Kingsley.

This article corrects two errors in Von Plessen and Rabinovicz's 'Die Kopfnerven von Salamandra maculata,' the one concerning the anastomosis between the ophthalmicus superficialis and the maxillary, and the other that between the ophthalmicus profundus and the palatine nerves of Salamandra. Dr. Kingsley also points out that the tentacular apparatus recently described by Mr. Alvin Davison in Amphiuma does not exist, and therefore this point cannot be used to show the close relationship between the Cœciliidæ and the Amphiumidæ.

The remaining 44 pages of the number are devoted to abstracts and reviews.

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## *SOCIETIES AND ACADEMIES.*

### THE NEW YORK ACADEMY OF SCIENCES.

The Section of Geology and Mineralogy held its regular meeting April 20th, President J. J. Stevenson in the chair.

The first paper of the evening was by Mr. John D. Irving, on 'The Stratigraphy of the Brown's Park Beds, Utah.' The observation on which the paper was based, was made by Mr. Irving the past summer, while spending a week in Brown's Park, together with Dr. J. L. Wortman and his expedition from the American Museum of Natural History, New York. Mr. Irving first sketched the topography and geology of the Green River Basin and the Uinta Mountains. He showed the location of the Brown's Park Beds and described their unconformable position upon the Uinta sandstone and the Green River shales. He next outlined the views that had already been published regarding their stratigraphical relations, especially those of Clarence King and S. F. Emmons, of the 40th Parallel Survey, who referred them to the Pliocene, and those of C. A. White, of the United States Geological Survey, who referred them to the Eocene. Mr. Irving stated that careful search failed to reveal any fossils, except a few fragments of bone, which were in such a state that Dr. Wortman considered them to be not earlier than the Pliocene. Mr. Irving then described the Lodore cañon and explained the formation of the Lake in which the Brown Park Beds were deposited as due to the Pliocene elevation of the Uinta sandstone that forms the wall of the Lodore cañon. When this was cut down by the river the lake disappeared and depositions ceased. He, therefore, corroborated the original determinations of King and Emmons. The paper will appear in full in the Transactions.

The second paper of the evening was by